

**Louisiana Department of Environmental Quality (LDEQ)  
Office of Environmental Services**

**STATEMENT OF BASIS**

**Ethanolamines Plant  
Initial Part 70 Permit  
INEOS Oxide – A Division of INEOS Americas, LLC  
Plaquemine, Iberville Parish, Louisiana  
Agency Interest Number: 89237**

**Activity Number: PER20040004  
Draft Permit 2599-V0**

The regulatory basis for the Statement of Basis is found in 40 Code of Federal Regulations (CFR) § 70.7 Permit issuance, renewals, reopenings, and revisions, subsection (a), paragraph (5) and the Louisiana Administrative Code (LAC), Title 33, Part III. AIR. Specifically §531. Public Notice and Affected State Notice, subsection A, paragraph 4. LAC 33:III.531.A.4 states:

“The permitting authority shall provide a statement that sets forth the legal and factual basis for the proposed permit conditions of any permit issued to a Part 70 source, including references to the applicable statutory or regulatory provisions. The permitting authority shall send this statement to any person who requests it and to EPA.”

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**I. APPLICANT:**

**Company:**

INEOS Oxide – A Division of INEOS Americas, LLC  
P.O. Box 718  
Plaquemine, LA 70765

**Facility:**

Ethanolamines Plant  
Located in Plaquemine, Iberville Parish, Louisiana  
Approximate UTM coordinates are 668.78 kilometers East and 3,355.58 kilometers North, Zone 15

**Responsible Official:**

Mr. Larry Locicero, Plant Manager

**II. FACILITY AND CURRENT PERMIT STATUS:**

INEOS Oxide, A Division of INEOS Americas, LLC , operates an existing ethanolamines facility which began operations in 1975, originally under Dow Chemical Company, Louisiana Operations (DOW). DOW owned and operated the Ethanolamines Plant under State Permit No. 2599(M-1), prior to acquiring the Union Carbide Corporation in 1999. As a direct result of this acquisition, divestiture of polyethylene plastic manufacturing technology and three specialty chemical products was required of DOW to alleviate the likely anticompetitive effects of the merger. INEOS Oxide, A Division of INEOS Americas, LLC (INEOS) acquired the Ethanolamines Plant from DOW in February of 2001. The Polyethylene Glycol Plant and Glycol Ether Plant are an integral part of Block 55 and because the Ethanolamines Plant is located in Block 55 also, DOW and INEOS entered into an agreement whereby INEOS would own and operate the Ethanolamines Plant and only operate the Polyethylene Glycol Plant and Glycol Ether Plant for DOW. The contracted agreements between DOW and INEOS required that INEOS be solely responsible for the environmental regulations and requirements for Block 55. Subsequently, INEOS received a separate source determination from the Louisiana Department of Environmental Quality (LDEQ)

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documenting that the DOW facility emissions should not be included with INEOS' Block 55 operations.

Since the Block 55 plants were under the control of INEOS and not under the control of Dow, the Block 55 emissions were not aggregated with DOW emissions to determine Part 70 source status. The emissions from Block 55 plants did not exceed the threshold status for a Part 70 source as defined by LAC 33:III.502. Consequently, "state only" permits for the EA and GE Plant had been issued.

As of June 23, 2003, the major source threshold for ozone (VOC and NO<sub>x</sub> emissions) changed from 50 tons per year to 25 tons per year. INEOS's facility-wide VOC emissions are greater than 25 tons per year, therefore, all Block 55 plants are considered to be a major source with respect to the Title V Operating Permit and Non-attainment New Source Review programs.

On April 30, 2004, EPA enacted 8-hour ozone NAAQS classifications, effective June 15, 2004 (69 FR 23858). In order to transition from the existing 1-hour standard to the new 8-hour standard, EPA adopted a rule for implementation of the 8-hour ozone NAAQS – the "Phase 1 Implementation Rule" – on April 30, 2004 (69 FR 23951). The Phase 1 Implementation Rule revoked the 1-hour standard in full, including the associated designations and classifications, effective June 15, 2005.

On June 10, 2005, Secretary McDaniel of LDEQ issued an emergency rule necessary to address two of the most immediate aspects of the 8-hour ozone NAAQS implementation: 1) the revision of LAC 33:III.711 to replace the 1-hour primary ambient air quality standard with the 8-hour standard; and 2) the revision of nonattainment new source review provisions for parishes that were reclassified from severe under the 1-hour standard to marginal under the 8-hour standard (Ascension, East Baton Rouge, Iberville, Livingston, and West Baton Rouge). The emergency rule became effective June 15, 2005. This permit addresses these changes.

Currently, the Ethanolamines Plant is covered under 2599 (M-1) issued on September 22, 2003, the Glycol Ether Plant is covered under Permit No. 1838T (M-5), issued on March 17, 2003, and the Polyethylene Glycol Plant is covered under Permit 2503 (M-1), issued on July 17, 2003.

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**III. PROPOSED PERMIT / PROJECT INFORMATION:**

**Proposed Permit**

The original application and Emission Inventory Questionnaire (EIQ), dated June 21, 2004, requested a Part 70 Operating Permit to meet the Title V operating permit requirements due to the ozone redesignation status change. An updated permit application and Emission Inventory Questionnaire was received July 13, 2005 and February 7, 2006.

INEOS Oxide, A Division of INEOS Americas, LLC, owns and operates the Ethanolamines Plant.

**Project Description**

The EA Plant produces monoethanolamine (MEA), diethanolamine (DEA), triethanolamine (TEA), and other higher molecular weight products from the reaction of aqueous ammonia (NH<sub>3</sub>) and ethylene oxide (EO). The finished EA products are stored in tanks, and shipped to customers either by drums, tank trucks, rail cars, barges and/or ships. The drum, tank truck, and rail car loading facilities are located in Block 56 of Dow's Louisiana Operations, Plaquemine site.

INEOS proposes to amend Specific Condition No. 1 of Permit No. 2599(M-1) to more appropriately reflect current operations. Specific Condition No. 1 is therefore Specific Requirement Nos. 25 and 48 of the Part 70 Operating Permit. Other proposed changes are as follows:

- Add a new Specific Requirement to address the addition or removal of fugitive emission piping component(s), FUG003/EIQDS, without triggering the need to apply for a permit modification, provided INEOS meets certain conditions, listed as Specific Requirement 54 of the Part 70 Operating Permit;
- Revise Specific Condition No. 4 regarding Emission Point DT of Permit No. 2599(M-1) to more accurately reflect current operations. Addressed as Specific Requirement Nos. 190 and 193 of this Part 70 Operating Permit. Also, Emission Point DT is listed as a GCXVII Activity in the Part 70 Operating Permit.

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- Remove Special Condition No. 6 of Permit No. 2599(M-1) as 40 CFR 60 Subpart Kb is not an applicable requirement for EQT063/EIQMX and EQT064/EIQMY as a result of the 2003 revision to the federal regulation;
- Revision of throughputs for several storage tanks to reflect current operations;
- Correction of the minimum water flowrate for EIQ1M from 35,000 lb/hr in Special Condition No. 8 of Permit No. 2599(M-1) to 15,000 lb/hr for EQT044/EIQ1M in Specific Requirement No. 12 of the Part 70 Operating Permit;
- Revision of ammonia emissions for EQT044/EIQ1M;
- Update to the ammonia compressor emissions RLP010/EIQWK to reflect that tanks cars are no longer degassed as part of normal operations;
- Revision of the regulatory requirements for the Area 3 Sump ARE002/EIQN6 to reflect the correct applicability of LAC 33:III.2153; and
- Correction of the equipment number for the phosphorous acid tank which is listed as an Insignificant Activity in the Part 70 Operating Permit.

**Permitted Air Emissions**

Estimated emissions as a result of the updates in tons per year are as follows:

Pollutant	Before	After	Change
PM <sub>10</sub>	26.67	26.67	0.0
SO <sub>2</sub>	-	-	-
NO <sub>x</sub>	-	-	-
CO	-	-	-
VOC*	10.57	10.60	+0.03

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**\*VOC LAC 33:III Chapter 51 Toxic Air Pollutants (TAPs):**

Pollutant	Before	After	Change
Acetaldehyde	<0.01	<0.01	0.0
Glycol Ethers (Table (51.1)) <sup>1</sup>	<0.01	<0.01	0.0
Glycol Ethers (Table (51.3)) <sup>2</sup>	<0.01	<0.01	0.0
Diethanolamine	0.42	0.42	0.0
Ethylene Oxide	0.69	0.69	0.0
Total	1.11	1.11	0.0

<sup>1</sup>Refers to emissions of Cellosolve

<sup>2</sup>Refers to emissions of Carbitol and Ethoxytriglycol

<sup>3</sup> Some pollutants were present but unaccounted for in previous permitting activities

**\*Other VOC (TPY):**

9.49

**NON-VOC LAC 33:III Chapter 51 Toxic Air Pollutants (TAPs):**

Pollutant	Before	After	Change
Ammonia	2.10	3.37	+1.27
Chlorine	0.09	0.09	0.0
Sulfuric Acid	<0.01	<0.01	0.00
Total	2.10	3.46	+1.27

The contiguous emissions from the EA, PEG, and GE plants exceed the VOC major source threshold; therefore, this permit is subject to the Part 70 Operating Permit Program. Estimated emissions in tons per year from these plants are as follows:

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	<u>PM<sub>10</sub></u>	<u>SO<sub>2</sub></u>	<u>NO<sub>x</sub></u>	<u>CO</u>	<u>VOC</u>
PEG Plant <sup>a</sup>	0.03	-	-	-	2.41
GE Plant <sup>b</sup>	-	-	-	-	47.96
EA Plant <sup>c</sup>	26.67	-	-	-	10.60
Total	26.70	-	-	-	60.97 <sup>d</sup>

a Based on estimated emissions from this permit.

b Based on estimated emissions stated in application dated June 10, 2005.

c Based on estimated emissions stated in application dated February 7, 2006.

d Exceeds the major source threshold of 50 TPY for marginal non-attainment areas operating under the LDEQ Ozone Emergency Rule, as of June 15, 2005.

**IV. REGULATORY ANALYSIS:**

This permit was reviewed for compliance with 40 CFR Part 70, the Louisiana Air Quality Regulations, New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAP). Prevention of Significant Deterioration (PSD)/Nonattainment New Source Review (NNSR) do not apply.

The applicability of the appropriate regulations is straightforward and provided in the Specific Requirements Section of the draft permit. Similarly, the Monitoring, Reporting and Recordkeeping necessary to demonstrate compliance with the applicable terms, conditions and standards are provided in the Specific Requirements Section of the draft permit.

**Prevention of Significant Deterioration Applicability (PSD)/Nonattainment New Source Review (NNSR)**

Criteria Pollutants which include PM<sub>10</sub>, SO<sub>2</sub>, NO<sub>x</sub>, VOC, and CO emissions, are below the significance threshold values and not applicable to PSD/NNSR requirements.

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**Maximum Achievable Control Technology (MACT)**

This facility is a minor source for toxic air pollutants (TAPs) but was formerly part of DOW, a major source of TAPs pursuant to LAC 33:III.Chapter 51, prior to transferring operations. Because the facility was previously a major source for TAPs, it is required to comply with LAC 33:III.5101.A, 5105.A, 5107.A - C, 5111.A.4, and 5113. However, for those sources previously subject to LAC 33:III.5109.A MACT requirements, LAC 33:III.5109.A, still applies. The facility meets LAC 33:III.5019.A MACT requirements by complying with certain requirements of the HON-40 CFR 63 Subparts F, G and H for specified emissions sources.

**Air Modeling Analysis**

Air modeling analysis was not required since the PSD/NNSR significance threshold values have not been exceeded.

**General Condition XVII Activities**

The facility will comply with the applicable General Condition XVII Activities emissions as required by the operating permit rule. However, General Condition XVII Activities are not subject to testing, monitoring, reporting or recordkeeping requirements. For a list of approved General Condition XVII Activities, refer to Section VIII of the draft Part 70 permit.

**Insignificant Activities**

All Insignificant Activities are authorized under LAC 33:III.501.B.5. For a list of approved Insignificant Activities, refer to Section IX of the draft Part 70 permit.

**V. PERMIT SHIELD:**

A permit shield is not a component of the draft permit.



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**VI. PERIODIC MONITORING:**

Compliance Assurance Monitoring (40 CFR 64) is not part of this Initial Title V Permit as the Ethanolamines Plant does not have any major source units that have the potential to emit greater than 100 tons of a regulated air pollutant before controls.

**VII. APPLICABILITY AND EXEMPTION OF SELECTED SUBJECT ITEMS**

The applicability or exemption of selected subject items are provided in Section XI of the draft Part 70 permit.

<b>VIII. STREAMLINED REQUIREMENTS</b>			
<b>Unit or Plant Site</b>	<b>Programs Being Streamlined</b>	<b>Stream Applicability</b>	<b>Overall Most Stringent Program</b>
Ethanolamines Plant	40 CFR 63 Subpart H - HON LAC 33:III.2122	Streams containing 5% VOHAP Streams containing 10% VOC	40 CFR 63 Subpart H <sup>1</sup>

<sup>1</sup> Based on an analysis of monitoring and record keeping requirements, 40 CFR 63 Subpart H is determined to be the most stringent requirement.

## GLOSSARY

**CAM** - Compliance Assurance Monitoring rule – A federal air regulation under 40 CFR Part 64

**Carbon Monoxide (CO)** – A colorless, odorless gas, which is an oxide of carbon.

**Maximum Achievable Control Technology (MACT)** - The maximum degree of reduction in emissions of each air pollutant subject to LAC 33:III.Chapter 51 (including a prohibition on such emissions, where achievable) that the administrative authority, upon review of submitted MACT compliance plans and other relevant information and taking into consideration the cost of achieving such emission reduction, as well as any non-air-quality health and environmental impacts and energy requirements, determines is achievable through application of measures, processes, methods, systems, or techniques.

**Nitrogen Oxides (NO<sub>x</sub>)** - Compounds whose molecules consists of nitrogen and oxygen.

**Organic Compound** - Any compound of carbon and another element. Examples: Methane (CH<sub>4</sub>), Ethane (C<sub>2</sub>H<sub>6</sub>), Carbon Disulfide (CS<sub>2</sub>)

**Part 70 Operating Permit**- Also referred to as a Title V permit, required for major sources as defined in 40 CFR 70 and LAC 33:III.507. Major sources include, but are not limited to, sources which have the potential to emit:  $\geq 10$  tons per year of any toxic air pollutant;  $\geq 25$  tons of total toxic air pollutants; and  $\geq 100$  tons per year of regulated pollutants (unless regulated solely under 112(r) of the Clean Air Act) (25 tons per year for sources in non-attainment parishes).

**PM<sub>10</sub>**- Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers as measured by the method in Title 40, Code of Federal Regulations, Part 50, Appendix J.

**Prevention of Significant Deterioration (PSD)** – A New Source Review permitting program for major sources in geographic areas that meet the National Ambient Air Quality Standards (NAAQS) at 40 CFR Part 50. PSD requirements are designed to ensure that the air quality in attainment areas will not degrade.

**Sulfur Dioxide (SO<sub>2</sub>)** – An oxide of sulfur.

**Title V permit** – See Part 70 Operating Permit.

**Volatile Organic Compound (VOC)** - Any organic compound which participates in atmospheric photochemical reactions; that is, any organic compound other than those which the administrator of the U.S. Environmental Protection Agency designates as having negligible photochemical reactivity.